We claim

1.-24. (cancelled)

25. (previously presented) A method of selecting an asphalt emulsion mixture to be used for reconstructing a paved road, comprising:

providing reclaimed asphalt pavement particles;

selecting an emulsion;

mixing said emulsion and said reclaimed asphalt pavement particles to form a proposed asphalt emulsion mixture;

testing said proposed asphalt emulsion mixture for performance using a raveling test and a moisture susceptibility test; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing said proposed asphalt emulsion mixture for performance.

26. (previously presented) The method of claim 25, further comprising:

testing said proposed asphalt emulsion mixture for performance using a stability test; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing said proposed asphalt emulsion mixture for performance.

27. (previously presented) The method of claim 26, further comprising:

testing modulus of said proposed asphalt emulsion mixture; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing modulus of said proposed asphalt emulsion mixture.

28. (previously presented) The method of claim 27, wherein resilient modulus is tested.

29. (previously presented) The method of claim 25, further comprising:

testing modulus of said proposed asphalt emulsion mixture; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing modulus of said proposed asphalt emulsion mixture.

30. (previously presented) The method of claim 29, wherein resilient modulus is tested.

31. (previously presented) The method of claim 25, further comprising:

testing said proposed asphalt emulsion mixture for performance using a thermal cracking test; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing thermal cracking of said proposed asphalt emulsion mixture.

32. (currently amended presented) The method of claim 25, further comprising:

testing said proposed asphalt emulsion mixture for performance using a thermal cracking test and a stability test; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing thermal cracking and stability of said proposed asphalt emulsion mixture.

33. (previously presented) The method of claim 25, wherein said selected asphalt emulsion mixture comprises a cationic emulsifier.

34. (previously presented) The method of claim 25, further comprising:

taking samples of said road; and

using said samples to make said reclaimed asphalt pavement particles.

35. (previously presented) The method of claim 34, further comprising:

inspecting said samples to determine the composition of layers in said samples, the thickness of said layers, and variations between samples.

36. (previously presented) The method of claim 34, wherein said samples are crushed to form reclaimed asphalt pavement particles.

37. (previously presented) The method of claim 34, wherein said samples are representative of variations in the road.

38. (previously presented) The method of claims 25, wherein at least two different proposed asphalt emulsion mixtures are formulated and tested for performance before said asphalt emulsion mixture to be used for reconstruction said paved road is selected.

39. (previously presented) The method of claim 25, wherein said selected asphalt emulsion mixture ravels no more than about 2% by weight after curing for at least about 4 hours.

40. (previously presented) The method of claim 31, wherein said selected asphalt emulsion mixture has a critical cracking temperature that is at least as low as the possible coldest temperature of said road with 98% reliability.

41. (previously presented) The method of claim 25, wherein said selected asphalt emulsion mixture has a retained strength, as determined by a moisture susceptibility test, of at least about 70%.

42. (previously presented) A method of reconstructing a paved road, comprising:

forming a proposed asphalt emulsion mixture from an emulsion and reclaimed asphalt pavement particles;

testing said proposed asphalt emulsion mixture for performance using a raveling test and a moisture susceptibility test; and

selecting an asphalt emulsion mixture to be used for reconstructing said paved road after testing said proposed asphalt emulsion mixture for performance;

removing pavement from said road to form reclaimed asphalt pavement particles, leaving at least about an inch of said pavement on said road;

mixing said reclaimed asphalt pavement particles from said road with an emulsion to form said selected asphalt emulsion mixture; and

applying said selected asphalt emulsion mixture to said partially reclaimed road so as to form a cold in-place recycling layer on said road.

43. (previously presented) The method of claim 42, further comprising:

inspecting said road to determine if said road is thick enough to leave at least about an inch base of pavement after removing pavement;

determining if said road has a structurally sound base; and

determining if said road has good drainage.

44. (currently amended) The method of claim 42, further comprising;

applying to said cold in-place recycling layer a wearing surface selected from the group consisting of a cold, hot, or warm mix overlay, a seal coat, a chip seal, a fog seal, ~~or other surface treatment~~ or other acceptable road surface treatment.

45. (previously presented) The product of the process of claim 42.

46. (new) A method of selecting an asphalt emulsion mixture to be used for reconstructing a paved road, comprising:

providing reclaimed asphalt pavement particles;

selecting an emulsion;

mixing said emulsion and said reclaimed asphalt pavement particles to form a proposed asphalt emulsion mixture;

testing said proposed asphalt emulsion mixture for performance using a raveling test; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing said proposed asphalt emulsion mixture for performance.

47. (new) The method of claim 46, further comprising:

testing said proposed asphalt emulsion mixture for performance using a stability test; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing said proposed asphalt emulsion mixture for performance.

48. (new) The method of claim 47, further comprising:

testing modulus of said proposed asphalt emulsion mixture; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing modulus of said proposed asphalt emulsion mixture.

49. (new) The method of claim 48, wherein resilient modulus is tested.

50. (new) The method of claim 46, further comprising:

testing modulus of said proposed asphalt emulsion mixture; and

selecting said asphalt emulsion mixture to be used for reconstructing said paved road after testing modulus of said proposed asphalt emulsion mixture.

51. (new) The method of claim 50, wherein resilient modulus is tested.